IN THE CLAIMS:

Claims 1-19 have been amended herein. All of the pending claims 1 through 19 are presented below. This listing of claims will replace all prior versions and listings in the application. Please enter these claims as amended.

1. (Currently Amended) A method for connecting a solder bump of an array of solder bumps on a semiconductor device and a contact site of a plurality of conductive contact sites of a member, comprising:

heating ~~said~~ the solder bump of ~~said~~ the array of solder bumps to a softening temperature Ts below a melting temperature of ~~said~~ the solder bump of ~~said~~ the array of solder bumps; and

contacting ~~said~~ the contact site of ~~said~~ the plurality of conductive contact sites by ~~said~~ the solder bump of ~~said~~ the array of solder bumps of ~~said~~ the semiconductor device using a pressure less than substantially 22 grams-force ~~for said solder bump and another solder bump of said array of solder bumps~~.

2. (Currently Amended) The method of claim 1, wherein ~~said~~ the melting temperature of ~~said~~ the solder bump of the array of solder bumps is ~~T degrees Centigrade~~ T°C higher than an ambient temperature To, and wherein ~~said~~ the softening temperature Ts is in the range of about 0.5T to 0.95T above ~~said~~ the ambient temperature To.

3. (Currently Amended) The method of claim 1, wherein ~~said~~ the solder bump of ~~said~~ the array of solder bumps contacts ~~said~~ the contact site of ~~said~~ the plurality of conductive contact sites at a pressure not substantially exceeding about 10 grams-force.

4. (Currently Amended) The method of claim 1, wherein ~~said~~ the solder bump of ~~said~~ the array of solder bumps contacts ~~said~~ the plurality of conductive contact sites at a pressure ~~of in~~ in the range of about 2 to 10 grams-force.

5. (Currently Amended) The method of claim 1, wherein ~~said~~ the semiconductor device having ~~said~~ the array of solder bumps is heated by one of hot air convection and infrared radiation.

6. (Currently Amended) The method of claim 1, wherein ~~said~~ the member having ~~said~~ the plurality of conductive contact sites is heated by one of hot air convection, conduction from a heated object, and infrared radiation.

7. (Currently Amended) The method of claim 1, wherein ~~said~~ the semiconductor device and ~~said~~ the member are placed in a temperature-controlled oven for heating to ~~said~~ the softening temperature Ts.

8. (Currently Amended) The method of claim 1, wherein ~~said~~ the semiconductor device is held in a chuck, ~~said~~ the chuck being heated.

9. (Currently Amended) The method of claim 1, wherein ~~member~~ the member is held in a chuck, ~~said~~ the chuck being heated.

10. (Currently Amended) The method of claim 1, wherein ~~said~~ the member having ~~said~~ the plurality of conductive contact sites is heated by electrical resistance wires.

11. (Currently Amended) The method of claim 1, wherein ~~said~~ the member and a substrate are mounted on a mounting board having an integral heater, ~~said~~ the integral heater controlled to heat ~~said~~ the member to ~~said~~ the softening temperature Ts.

12. (Currently Amended) The method of claim 1, wherein ~~said~~ the array of solder bumps comprises Sn-Pb solder having a lead content in the range of about 40 to about

98 percent, and ~~said~~ the softening temperature Ts comprises a range of about 140 to ~~180 degrees C~~ 180°C.

13. (Currently Amended) The method of claim 1, wherein ~~said~~ heating comprises predetermining a heating time X to heat ~~said~~ the solder bump of ~~said~~ the array of solder bumps to ~~said~~ the softening temperature Ts, and heating for ~~said~~ the time X.

14. (Currently Amended) The method of claim 1, wherein ~~said~~ heating comprises initiating ~~said~~ the heating, measuring a temperature of one of ~~a~~ the member and ~~a~~ the semiconductor ~~die~~ device ~~being heated~~, and stopping ~~said~~ the heating to limit ~~the~~ a temperature of ~~said~~ the solder bump of ~~said~~ the array of solder bumps to no more than ~~said~~ the softening temperature Ts.

15. (Currently Amended) An apparatus for connecting a solder ball to a contact site comprising:

a first member having a solder ball thereon;

a second member having a contact site;

apparatus for moving ~~said~~ the first member against ~~said~~ the second member for contact of ~~said~~ the solder ball to ~~said~~ the contact site, ~~said~~ the first member contacting ~~said~~ the second member at a pressure less than substantially 22 grams-force for ~~said at least one~~ the solder ball; and

heating apparatus for heating ~~said~~ the solder ball and ~~said at least one~~ the contact site to a submelting ~~solder~~ solder-softening temperature Ts.

16. (Currently Amended) The apparatus of claim 15, wherein ~~said~~ the contact site comprises one of a substantially flat surface, a recess for receiving a portion of a solder ball, and a recess having at least one projection therein for deforming a solder ball inserted therein.

17. (Currently Amended) A testing apparatus for a semiconductor package having a ball grid array of solder balls on a surface thereof, ~~said~~ the apparatus comprising:

an insert formed of generally noncompliant material, ~~said~~ the insert having a first surface including an array of contact sites for contacting ~~said~~ the ball grid array of solder ~~balls,~~ balls and having a second surface;

a substrate having a first surface, having a second surface, ~~said~~ the second surface of ~~said~~ the insert secured to ~~said~~ the first surface of ~~said~~ the substrate, and having a pattern of leads on ~~said~~ the substrate for connecting to contact leads in a socket;

electrical leads connecting ~~said~~ the array of contact sites of ~~said~~ the insert with ~~said~~ the pattern of leads of ~~said~~ the substrate;

a test board having ~~said~~ the socket with ~~said~~ the contact leads connected to a testing circuit, ~~said~~ the substrate and ~~said~~ the insert for insertion into ~~said~~ the socket for contact of ~~said~~ the pattern of leads of ~~said~~ the substrate with ~~said~~ the contact leads of ~~said~~ the socket; and

heating apparatus associated with at least one of ~~said~~ the substrate, ~~said~~ the insert, and ~~said~~ the socket.

18. (Currently Amended) The apparatus of claim 17, further comprising ~~temperature~~ temperature-sensing apparatus attached to one of ~~said~~ the substrate, ~~said~~ the insert, and ~~said~~ the semiconductor package.

19. (Currently Amended) The apparatus of claim 18, further comprising a temperature controller for controlling ~~said~~ the heating apparatus.